DETAILED ACTION

Status of the Application

1. Acknowledgement is made of the amendment received 12/15/09. **Claims 18, 20-23, and 42-47** are pending in this application. Claims 18, 20-21 and 42 were amended, claims 1-17, 19, and 24-41 were cancelled and claims 46-47 were newly presented in the amendment received 12/15/09.

Drawings

2. The objection to the drawings has been withdrawn in light of Applicant's remarks received 12/15/09.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 18, 20, 22-23 and 45-46** are rejected under 35 U.S.C. 102(b) as being anticipated by Fujiwara et al. (US Patent Application Publication No 2002/0054461) hereinafter referred to as Fujiwara.

5. Per **Claims 18 and 45** Fujiwara (e.g. figures 3a and 3b) discloses a magnetic device, comprising a spin valve, said spin valve comprising a plurality of layers arranged in a stack (e.g. figure 3a) including at least one free magnetic layer (31), a spacer layer (33) and a permanent magnetic layer (32); wherein said spacer layer comprises a matrix (33b) and nanoparticles (33a), said matrix being a matrix of nano-porous material [0021-0023], (see figures 3a-3b.)

6. Claims 18 and 45 each include "product-by-process" limitations (e.g. "obtained according to a method", "obtained by electrochemical assembly" and "subjected to chemical etching".)

While product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Hirao*, 190 USPQ 15 at 17(footnote 3). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) See also in re Brown, 173 USPQ 685: In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324: In re Avery, 186 USPQ 116 in re Wertheim, 191 USPQ 90 (209 USPQ 254 does not deal with this issue); and In re Marosi et al, 218 USPQ 289 final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above case law makes clear.

7. Additionally, claim 18 recites the performance properties of the free magnetic layer (e.g. able to be associated to a temporary magnetization (MT); and the permanent magnetic layer (e.g. associated to a permanent magnetization (MP)). These functional limitations do not distinguish the claimed device over the prior art, since it appears that this limitation can be performed by the prior art structure of Fujiwara. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) See MPEP 2114. Additionally, these functional limitations are taught by Fujiwara in [0021].

8. Per **Claim 20**, Fujiwara discloses the device of claim 18, including where said matrix (135) is a matrix of dielectric material. [0022]

9. **Claims 22-23**, recite the intended use of the device. These functional limitations do not distinguish the claimed device over the prior art, since it appears that this limitation can be performed by the prior art structure of Fujiwara. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) See MPEP 2114.

10. Per **Claim 46**, Fujiwara discloses the device of claim 18, including where the pores contain metallic nanoparticles in column structure. (see figures 3a-3b)

11. Claim 46 includes "product-by-process" limitations (e.g. "obtained by electrodeposition"). While product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Hirao*, 190 USPQ 15 at 17(footnote 3). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) See also in re Brown, 173 USPQ 685: In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324: In re Avery, 186 USPQ 116 in re Wertheim, 191 USPQ 90 (209 USPQ 254 does not deal with this issue); and In re Marosi et al, 218 USPQ 289 final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether

claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above case law makes clear.

Allowable Subject Matter

12. **Claims 42-44 and 47** are allowed. **Claim 21** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is an examiner's statement of reasons for allowance: No prior art was found that anticipates nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination. In particular, the prior art of record does not teach a device including a spin valve comprising a plurality of layers arranged in a stack including at least one free magnetic layer, a spacer layer and a permanent magnetic layer; wherein said spacer layer comprises a matrix comprising a porous dielectric material comprising porous silicon with nanoparticles contained in the pores. It would not have been obvious to one having ordinary skill in the art at the time the invention was made to do so. No prior art was found that taught this novel device.

Response to Arguments

14. Applicant's arguments filed 12/15/09 have been fully considered but they are not persuasive.

15. Applicant arguments (pages 5-8) regarding the drawings are persuasive. The objection to the drawings has been withdrawn.

16. Applicant argues (page 6) that Fujiwara figures 2 and 3A-B do not show pores. The examiner respectfully disagrees. Applicant is reminded that during examination, the claim terms are given their broadest reasonable interpretation. Fujiwara figures 2 and 3A-B and [0022-0023] clearly show pores, even if the word pore is not used.

17. In response to applicant's arguments regarding the deposition process of Fujiwara (page 6) it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMI M. VALENTINE whose telephone number is (571)272-9786. The examiner can normally be reached on Monday-Friday 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Nguyen can be reached on (571) 272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JMV/

/Bradley K Smith/
Primary Examiner, Art Unit 2894